

## IN THE CLAIMS

1. (currently amended) An on-line purchase and load (OPAL) server **computer** for performing a **purchase** transaction over a network using a virtual smart card, said OPAL server **computer** comprising:

a virtual smart card database having a plurality of records, each record including a virtual **smart** card identifier and a **monetary** balance corresponding to a single virtual smart card;

a hardware security module **arranged to decrypt said monetary balance, to decrease said monetary balance, and to encrypt said decreased monetary balance;**

a smart card emulator that receives smart card commands **from a pseudo card reader module** and processes said commands in conjunction with said virtual smart card database and said hardware security module, **said smart card emulator arranged to retrieve one of said records from said virtual smart card database, and to deliver said monetary balance to said hardware security module and to store said encrypted decreased monetary balance received from said hardware security module in said retrieved record;** and

[[a]] **said** pseudo card reader module that receives said smart card commands **related to said purchase transaction** over said network and relays said commands to said smart card emulator, whereby said OPAL server **computer** performs [[a]] **said purchase** transaction over said network using one of said records in said virtual smart card database.

2. (currently amended) An OPAL server as recited in claim 1 wherein said virtual card database further includes purchase algorithm identifiers, and wherein said hardware security module includes a plurality of purchase algorithms that are identified for use by one of said purchase algorithm identifiers, ~~whereby said hardware security module may be used to perform cryptographic functions associated with a purchase~~ **is arranged to decrypt said monetary balance using one of said purchase algorithms identified by one of said purchase algorithm identifiers.**

3. (original) An OPAL server as recited in claim 1 further comprising:

a user verification module that verifies a user accessing said OPAL server and generates a user identifier, said user identifier being suitable to identify one of said virtual smart card records in said card database.

4. (original) An OPAL server as recited in claim 1 wherein said smart card emulator and said pseudo card reader module are implemented as a single software module.
5. (currently amended) An OPAL server as recited in claim 1 wherein said network is an internet over which said OPAL server communicates with a merchant server and a payment server to transact ~~a purchase~~ **said purchase transaction.**
6. (original) An OPAL server as recited in claim 1 wherein said network is an internet over which said OPAL server communicates with a bank server and a load server to load value onto said virtual smart card.
7. (original) An OPAL server as recited in claim 1 wherein said network is an internet over which said OPAL server communicates with a web server and an authentication server to authenticate a user.
8. (original) An OPAL server as recited in claim 1 wherein said OPAL server communicates over said network with a payment gateway for funding account authorization and clearing.

Claims 9-33 canceled.

34. (currently amended) An OPAL server as recited in claim 1 wherein said smart card emulator is suitable for ~~retrieving one of said records from said virtual smart card database, increasing or decreasing said balance of said record, and then~~ returning said record to said virtual smart card database.

35. (previously presented) An OPAL server as recited in claim 1 wherein each record of the virtual smart card database also includes a funding account number wherein the funding account number identifies an account that contains a monetary amount that can be loaded onto a virtual smart card.

36. (previously presented) An OPAL server as recited in claim 1 wherein the OPAL server is further configured to receive a purchase request message from a client terminal, wherein the purchase request message indicates a good or service to be purchased by a user, a user identifier, and a user password.

37. (previously presented) An OPAL Server as recited in claim 36 wherein the OPAL server is further configured to send a draw request message to a payment server, wherein the draw request message indicates an amount of money required to purchase the good or service and a merchant identifier.

38. (previously presented) An OPAL Server as recited in claim 37 wherein the OPAL server is further configured to receive a debit command from the payment server, wherein the debit command indicates an amount of money to debit from a respective virtual smart card.

39. (previously presented) An OPAL Server as recited in claim 38 wherein the smart card emulator is configured to debit itself in response to the debit command by the amount of money indicated in the debit command.

40. (previously presented) An OPAL Server as recited in claim 38 wherein the OPAL server is further configured to send a debit response message to the client terminal, wherein the debit response message informs the user either that the amount of money has been debited from the smart card emulator or that money has not been debited from the smart card emulator due to a lack of sufficient funds.

41. (currently amended) An on-line purchase and load (OPAL) server **computer** for performing a **load** transaction over a network using a virtual smart card, said OPAL server comprising:

a virtual smart card database having a plurality of records, each record including a virtual **smart** card identifier and a **monetary** balance corresponding to a single virtual smart card;

a hardware security module **arranged to decrypt said monetary balance, to increase said monetary balance, and to encrypt said decreased monetary balance;**

a smart card emulator that receives smart card commands and processes said commands in conjunction with said virtual smart card database and said hardware security module, the smart card emulator also configured to send a load request message to a load server, wherein the load request message indicates a virtual smart card identifier and a load amount for a respective virtual smart card, the load amount indicating an amount of money to load onto the respective virtual smart card, **said smart card emulator arranged to retrieve one of said records from said virtual smart card database and to deliver said monetary balance to said hardware security module and to store said encrypted increased monetary balance received from said hardware security module in said retrieved record;** and

a pseudo card reader module that receives said smart card commands **related to said load transaction** over said network and relays said commands to said smart card emulator, whereby said OPAL server performs **[[a]] said load** transaction over said network using one of said records in said virtual smart card database.

42. (previously presented) An OPAL server as recited in claim 41 wherein the OPAL server is configured to receive a load command from a load server wherein the amount of money indicated in the load request message is loaded onto the respective virtual smart card.

43. (previously presented) An OPAL server as recited in claim 42 wherein the smart card emulator is configured to send a load response message to a client terminal, wherein the load response message informs a user that the amount of money has been loaded onto the respective virtual smart card.

44. (new) An OPAL server computer as recited in claim 1 further comprising:

a memory arranged to store said virtual smart card database, said smart card emulator, and said pseudo card reader module.

45. (new) An OPAL server computer as recited in claim 1 wherein said hardware security module is a hardware device in said OPAL server computer.

46. (new) An OPAL server computer as recited in claim 1 wherein said hardware security module is a security box attachable to said OPAL server computer.

47. (new) An OPAL server computer as recited in claim 41 further comprising:  
a memory arranged to store said virtual smart card database, said smart card emulator, and said pseudo card reader module.

48. (new) An OPAL server computer as recited in claim 41 wherein said hardware security module is a hardware device in said OPAL server computer.

49. (new) An OPAL server computer as recited in claim 41 wherein said hardware security module is a security box attachable to said OPAL server computer.